United Arab Emirates Solar Energy - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2026 - 2031)

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Report description:

United Arab Emirates Solar Energy Market Analysis

United Arab Emirates Solar Energy Market size in 2026 is estimated at 7.61 gigawatt, growing from 2025 value of 6.91 gigawatt with 2031 projections showing 12.29 gigawatt, growing at 10.06% CAGR over 2026-2031.

The expansion is anchored in enforceable federal decarbonization law, ultra-competitive IWPP procurement that locks in record-low tariffs, and a parallel strategy to secure renewable electricity for large-scale green hydrogen exports. Additional lift comes from falling module and battery prices, routine deployment of bifacial and TOPCon technologies, and a supportive banking ecosystem that extends long-tenor ESG-linked loans to developers and corporate offtakers. At the same time, grid reinforcement projects, water-use restrictions that disadvantage CSP, and land-lease competition with real-estate megaprojects temper the growth slope but do not alter the upward trajectory. Competitive dynamics feature Chinese equipment suppliers delivering cost leadership, state-backed Emirati utilities steering site allocation and offtake, and European developers bidding aggressively for IWPP concessions, all of which stimulate steady capacity additions and catalyze downstream service opportunities across construction, O&M, and storage integration.

United Arab Emirates Solar Energy Market Trends and Insights

Government Net-Zero Mandates and Feed-In Tariff Structures Accelerate Procurement

Federal Decree-Law No. 11/2024, effective May 2025, converts voluntary climate pledges into binding obligations through a national carbon registry and verified MRV protocols, obliging heavy industry to procure renewable electricity or buy offsets. DEWA's Phase 6 tender in the Mohammed bin Rashid Al Maktoum Solar Park achieved a record tariff of USD 1.6215 cents per kilowatt-hour in 2024, removing the cost rationale for gas baseload expansion. Updated NDC targets commit to a 47% emissions cut by 2035 and 19.8 GW of renewables by 2030, pushing utilities and corporates toward solar PPAs. The D33 Industry Friendly Power Policy lets factories size rooftop systems up to full connected load, streams compensation at 10.5 fils per kilowatt-hour, and shortens payback periods to under four years. These converging policies lower investment risk, pace procurement schedules, and embed solar into corporate decarbonization roadmaps.

Utility-Scale Park Tendering Under IWPP Model Drives Gigawatt Deployments

EWEC's pipeline of three 1.5 GW projects, Al Zarraf, Al Khazna, and Al Ajban, under the IWPP structure, allocates minority equity to winning consortia while Abu Dhabi retains majority ownership, de-risking financing and pushing bids below 2 cents per kilowatt-hour. EWEC plans 1.4 GW of solar additions per year between 2027 and 2037, enabling renewables to supply more than half of Abu Dhabi's electricity demand. Dubai mirrors this scale through a 1.8 GW sixth phase at its flagship park that will serve 540,000 homes and displace 2.36 million t of CO? annually. The size and cadence of these tenders standardize EPC processes, yet expose the pipeline to potential land-handover or grid-interconnection delays that can ripple through capacity forecasts.

Grid-Integration Bottlenecks in Desert Load Centers Constrain Dispatch

Utility-scale parks in remote desert areas outpace transmission build-out, leading to midday curtailment that erodes revenue. TRANSCO upgrades run through 2027 and will add high-voltage lines and STATCOMs to stabilize voltage swings. EWEC's 400 MW battery program, due in 2026, tackles intra-day imbalances, but evening peak coverage still primarily relies on gas turbines. Lack of a wholesale market prevents time-of-use price signals that could incentivize flexible demand. Off-grid microgrids at industrial sites offer a workaround and illustrate why the off-grid segment is projected to log an 18.8% CAGR, but their absolute contribution remains modest.

Other drivers and restraints analyzed in the detailed report include:

Declining Module and Storage Costs Compress Tariff FloorsHybrid Solar-Hydrogen Pilots Position the UAE as a Green Fuel ExporterLand-Lease Competition with Real-Estate Megaprojects Escalates in Coastal Zones

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

Solar Photovoltaic held 88.12% of installed capacity in 2025 and is forecast at a 10.33% CAGR to 2031 as bifacial panels become standard in IWPP tenders, lifting energy yield by up to 20% compared with monofacial modules. The UAE solar energy market size for PV is projected to cross 10.8 GW by 2031, reinforcing its primacy in meeting federal clean-energy quotas. Al Dhafra's 2 GW plant validated bifacial deployment with a performance ratio above 85%, encouraging TOPCon uptake that trims system LCOE through higher efficiency. The UAE solar energy market benefits from GSO IEC 61215 standards that reduce failure rates amid extreme heat and humidity. Concentrated Solar Power remains below 11.88% of capacity because cooling water is scarce and the capital cost is high. Noor Energy 1 proves CSP can deliver post-sunset energy via 15-hour molten salt storage, yet no new CSP tenders emerged after 2024, signaling investor preference for PV plus batteries.

CSP's longer construction cycle and higher leverage ratios complicate financing in a tariff environment where PV bids keep falling. Water-use restrictions tighten further under national conservation policies and push developers toward dry cooling, which erodes thermal efficiency. Storage cost compression strengthens the economic case for PV hybrids, crowding CSP out of future procurement schedules and consolidating the UAE solar energy market around crystalline silicon technologies.

The United Arab Emirates Solar Energy Market Report is Segmented by Technology (Solar Photovoltaic and Concentrated Solar Power), Grid Type (On-Grid and Off-Grid), and End-User (Utility-Scale, Commercial and Industrial, and Residential). The Market Sizes and Forecasts are Provided in Terms of Installed Capacity (GW).

List of Companies Covered in this Report:

Masdar (Abu Dhabi Future Energy Company) ACWA Power TAQA Group EDF Renewables JinkoSolar Holding Co. Canadian Solar First Solar Trina Solar LONGi Green Energy JA Solar Huawei Digital Power Sungrow Power Supply Engie TotalEnergies Renewables JinkoPower CleanMax MEA FZCO Enerwhere City Solar Sunergy Solar MAYSUN SOLAR FZCO

Additional Benefits:

The market estimate (ME) sheet in Excel format
3 months of analyst support

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